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INSECT DISEASE CHECKS INROADS OF
EUROPEAN SPRUCE SAWFLY THIS YEAR

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An insect disease this year checked the inroads of the European spruce sawfly, an insect immigrant from northern and central Europe that has been defoliating spruce forests in New England for the last five years. Entomologists of the U. S. Department of Agriculture, who recently scouted the northeastern woods, report that an infection has almost wiped out the needle eating worms in southern Vermont and southern New Hampshire. In September -- practically no live sawfly worms were found in Maine either. Maine, however, is one of the places where adult sawflies may not come out from their cocoons for two or three or even four years. Holdover cocoons remain a potential threat in Maine.

In a few stands of virgin spruce on mountain tops and on young trees in plantations, where the survey showed little if any disease among the insects, there was a marked increase in sawfly numbers. The mountain tops where sawflies have multiplied include Cornell Mountain in the Catskills of New York, Green Peak and Mt. Equinox in southern Vermont, and Deer Mountain in Pittsburg, New Hampshire. The plantations are at Moretown, Vt., Westfield, Mass., and several places in New York.

The exact nature of the sawfly disease is not known, nor has it yet been named. It attacks the fly in its larval stage and has about the same effect as wilt diseases of other insect larvae. An infected worm rapidly loses its normal green color, changing first to yellowish green and then to black, and soon

disintegrates. As the body contents ooze out, the skin often sticks to the needle on which the larva was feeding when stricken. It may stay there for several weeks. The sawfly's habit of making a mass attack on a tree helps spread the disease. As the worms start up a tree trunk many are knocked off by stronger climbers trying to get ahead. The disease organisms apparently pass readily from one worm to another in the struggling mass at the base of the tree.

The European spruce sawfly has infested spruce forests in Europe for many years. For some unknown reason -- possibly the climate, possibly some natural enemy -- it has not been a destructive pest there. In North America, however, it has become a serious forest tree pest. In 1930 it defoliated extensive stands of spruce in the Gaspe Peninsula, Quebec. By 1935 it was found to be prevalent from the Maine-Quebec border well down into Maine. It is now present in Maine, Vermont, New Hampshire, and eastern New York.

Officials of the Bureau of Entomology and Plant Quarantine, say that where the cost is justified, the European spruce sawfly may be effectively controlled by arsenical sprays applied by ground equipment or aircraft. As an effort toward another type of control, several colonies of parasites that may be responsible for the sawfly's harmlessness in Europe have been liberated in our infested forests. Nevertheless, the flies continued their destructive feeding until disease broke out among them. This disease -- first noticed three years ago and now slowing down sawfly activity in many places -- may prove a permanent check on the pest, the Bureau says, but adds that there is no certainty that the check is not merely temporary. The sawfly, reduced to comparatively small numbers by the infection, may subside for a few years. Then it may emerge once more in large numbers, only to succumb again in a year or two to the infection. Many sawflies come and go in such cycles.

EDITORS: Additional details follow:

The sawfly larva, the form that damages spruce, resembles a caterpillar, with a smooth green body and a brownish head. Five fine white lines run along its body. This worm feeds on spruce needles, preferably the older ones. The bigger worms are ravenous eaters. Where they have hatched in large numbers they may nearly strip trees of their needles before danger is recognized. Enough worms feeding long enough make a spruce forest look as it if had been swept by fire.

When mature, the larva drops to the ground and spins its winter home -- a brown cocoon, 3/8 inch long. In the summer it comes out from the cocoon as a stout, black 4-winged fly, with yellowish markings, ready to lay the eggs from which a new generation of destructive worms will hatch. In some places adult flies come out early enough to start a second generation. There are at least two generations in the badly infested areas in New Hampshire and Vermont. In other places, however, the adult flies may not emerge for two to four years.

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